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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/944,050      | 08/30/2001  | Rand David Dannenberg | M00A226             | 8351             |

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EXAMINER

CHANG, AUDREY Y

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2872

DATE MAILED: 11/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/944,050

Applicant(s)

DANNENBERG, RAND DAVID

Examiner

Audrey Y. Chang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 7-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 16-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of claims 1-6 and 16-21 (Invention I species A) in Paper No. 8 is acknowledged. The traversal is on the ground(s) that "not believed that a search and examination of all species would pose a serious burden". This is not found persuasive because the invention groups and species are drawn to **very different coating structures** that the search for one is not required for the other.

**The requirement is still deemed proper and is therefore made FINAL.**

2. **Claims 7-15 are withdrawn** from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention group and species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

3. Claims 1-6 and 16-21 remain pending in this application.

### ***Claim Objections***

4. **Claims 1-6 and 16-21 are objected to because of the following informalities:**

(1). The phrase "solid solution" recited in claims 1 and 16 is confusing, wrong and indefinite since it is not clear what exactly is a "solid solution". It is understood in the art that there is no such solution exists in nature. It is therefore not clear what is the limitation therefore scope of the claims sought for patent.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-6, and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Stachowiak (PN. 6,475,626) in view of the patent issued to Ogino et al (PN. 6,436,542).**

Stachowiak teaches a low-e matchable *coated articles and method* for making the same wherein the coated articles comprises a *substrate* (1) and a *coating on the substrate*, (please see Figure 1). The *coating* further comprises a *first dielectric layer* (3), a *metallic layer* (7) over the first dielectric layer and a *second dielectric layer* (11), over the metallic layer. With regard to claim 3, Stachowiak teaches that the *metallic layer* is *silver*. With regard to claims 4-6, Stachowiak further teaches to include *nickel-chromium layer* (5 and 9) as the *barrier layers* interposed between the first dielectric layer and the metallic layer and between the metallic layer and the second dielectric layer. The method steps concerning depositing these layers as claimed in claim 16 are met by the disclosure of this layer structure implicitly.

Stachowiak teaches that the first and second dielectric layer could be made of titanium oxide and other oxides such as silicon oxide and zinc oxide. Although this reference does not identify them as “anti-reflection layers” the anti-reflection property is implicitly included in the layer material and it is well known in the art to design the low-e coating with metallic layer interposed between two antireflection layers for the benefit of reducing unwanted reflection. It would then have been obvious to one skilled in the art to make the dielectric layers antireflective layers for the benefit of reducing unwanted reflection from the coated article. This reference also does not teach explicitly that the titanium oxide is in the *amorphous* state with *additive* selected from the claimed oxides. Ogino et al in the same field of endeavor teaches a multilayer coating structure that is comprised of *amorphous titanium oxide with additive of tantalum oxide* as the layer material wherein the layer material has photocatalytic

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activity and the multilayer has good antifouling performance, (please see columns 2, and 8). It would then have been obvious to one skilled in the art to replace the titanium oxide layer material of Stachowiak with the amorphous titanium oxide with additive of tantalum oxide as the dielectric layers for the benefit of making the low-e coated article with good antifouling performance.

With claim 17, Stachowiak teaches that the coated article is heat-treated with temperature (about 500 Celsius) above the heat treatment of the substrate (about 150-200 Celsius) alone, (please see column 4).

With regard to claims 18-20, Stachowiak teaches that the layers are deposited by sputtering process, (please see column 4, line 55). However it does not teach explicitly that it is done in an oxygen environment. Ogino et al teaches that the layer material in the multilayer structure is formed by sputtering process in oxygen environment with titanium and the additive as the target, (please see the abstract and column 2). It would then have been obvious to one skilled in the art to apply the teachings of Ogino et al to modify the deposition method of Stachowiak for the benefit of manufacturing the coated article using sputtering process with sufficient oxygen content. Although it does not teach that the titanium and the additive as separate target such modification would have been obvious to one skilled in the art for the benefit of having a control of the sputtering process for the two materials separately.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

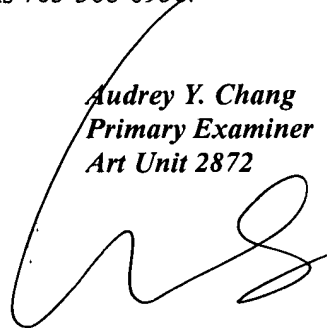
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 703-305-0024. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

*Audrey Y. Chang*  
*Primary Examiner*  
*Art Unit 2872*

A. Chang, Ph.D.

A handwritten signature in black ink, appearing to be 'A. Chang', written over the typed name and title.